

### REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendment and the following response.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, are presented, with an appropriate defined status identifier.

Please cancel claims 12-18.

Please add claims 19-36. Support for new claims 19-36 may be found in the specification and claims as filed.

After entry of this Amendment, claims 19-36 are pending in this application.

Applicants thank the Examiner for participating in a telephone interview with Applicants' representative, Stephen B. Maebius, on April 22, 2003. In the interview, Applicants' representative indicated that it was Applicants' intent to have Paper No. 23, entitled "AMENDMENT AND RESPONSE TO FINAL REJECTION UNDER 37 C.F.R. § 1.116," entered upon filing the Request for Continued Examination on February 12, 2003. This response confirms Applicants' intent.

In the Office Action dated May 7, 2003, the Examiner objected to claims 12 and 15-18 for informalities. Claims 12 and 15-18 have been canceled, obviating the Examiner's objections, however Applicants traverse the rejection and reserve the right to pursue the canceled claims in a subsequent application. Applicants believe that new claims 19-36 address the Examiner's previous objections and do not contain any informalities. Applicants request that the Examiner reconsider the objections.

In the Office Action, the Examiner rejected claims 12 and 15-18 under 35 U.S.C. § 112, second paragraph, "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." Claims 12 and 15-18 have

been canceled, obviating the Examiner's objections, however Applicants traverse the rejection and reserve the right to pursue the canceled claims in a subsequent application. Applicants believe that new claims 19-36 address the Examiner's previous rejections and fully comply with the requirements under 35 U.S.C. § 112, second paragraph. Applicants request that the Examiner reconsider the rejections.

In the Office Action, the Examiner rejected claims 12 and 15-18 under 35 U.S.C. § 112, first paragraph, "as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention," (*i.e.*, the "written description" requirement.) Claims 12 and 15-18 have been canceled, obviating the Examiner's objections, however Applicants traverse the rejection and reserve the right to pursue the canceled claims in a subsequent application. New claims 19-36 recite "a sequence having at least 90% similarity with the fragment," which the Examiner contends is not adequately described in the specification. Applicants believe that new claims 19-36 fully comply with 35 U.S.C. § 112, first paragraph and request that the Examiner reconsider the rejection for the following reasons.

Verbatim support for the recited limitation is present throughout the specification, and nonetheless, one skilled in the art would recognize that the claimed fragment need not be identical to the sunflower orf 522 sequence. Rather, the claimed fragment need only encode the same functional protein as at least a portion of the sunflower orf 522 sequence.

Description of a representative number of species does not require the description to be of such specificity that it would provide individual support for each species that the genus embraces. For example, in the molecular biology arts, if an applicant disclosed an amino acid sequence, it would be unnecessary to provide an explicit disclosure of nucleic acid sequences that encoded the amino acid sequence. Since the genetic code is widely known, a disclosure of an amino acid sequence would provide sufficient information such that one would accept that an applicant was in possession of the full genus of nucleic acids encoding a given amino acid sequence, but not necessarily any particular species. Cf. *In re Bell*, 991 F.2d 781, 785, 26 USPQ2d 1529, 1532 (Fed. Cir. 1993) and *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994).

MPEP § 2163 (8<sup>th</sup> ed. 2001). As such, because of redundancy in the genetic code, one skilled in the art would recognize that Applicants were in possession of the recited method “wherein the nucleotide sequence comprises a 347 bp fragment of the orf 522 sequence of *Helianthus annuus* or a sequence having at least 90% similarity with the fragment.”

The Examiner cites MPEP § 2163 for the proposition that a “claimed invention as a whole may not be adequately described where an invention is described solely in terms of a method of its making coupled with its function and there is no described or art-recognized correlation or relationship between the structure of the invention and its function.” However, in Applicants case, as noted above, there is a described and art-recognized correlation between the nucleotide sequence and its function, and Applicants respectfully request reconsideration of the rejection under 35 U.S.C. § 112, first paragraph, “written description.”

In the Office Action, the Examiner rejected claims 12 and 15-18 under 35 U.S.C. § 112, first paragraph, stating that “[t]he specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims,” (*i.e.*, the “enablement” requirement). Claims 12 and 15-18 have been canceled, obviating the Examiner’s rejections, however, Applicants traverse the rejection and reserve the right to pursue the canceled claims in a subsequent application. New claims 19-36 recite “a sequence having at least 90% similarity with the fragment,” which the Examiner contends is not fully enabled. Applicants believe that new claims 19-36 fully comply with 35 U.S.C. § 112, first paragraph, and for similar reasons as noted above in response to the “written description” requirement, Applicants respectfully contend that the limitation is also fully enabled. Based on the specification and general knowledge of the genetic code, one skilled in the art could easily practice the claimed methods. One skilled in the art would not have to engage in undue experimentation to integrate or to detect a sequence having 90% similarity with the fragment because the genetic code and its properties are widely recognized and understood, and as such, Applicants respectfully request that the Examiner reconsider the rejection under 35 U.S.C. § 112, first paragraph, “enablement.”

In the Office Action, the Examiner rejected claims 12 and 15-18 under 35 U.S.C. § 102(b), as being anticipated by Rambaud *et al* (1993), taken with the evidence presented in Dubreucq *et al* (1999). Claims 12 and 15-18 have been canceled, obviating the Examiner's rejections, however Applicants traverse the rejection and reserve the right to pursue the canceled claims in a subsequent application. Applicants respectfully contend that new claims 19-36 are not anticipated by Rambaud *et al.* for the following reasons.

Applicants have shown that the presence of a 347 bp fragment within the orf 522 sequence of *Helianthus annuus* can be used to identify sterile, recombinant chicory plants. Applicants respectfully contend that new claims 19-36 are not anticipated by Rambaud *et al.* because Rambaud *et al.* do not disclose or suggest detecting a 347 bp fragment that corresponds with cytoplasmic male sterility, nor do Rambaud *et al.* disclose or suggest selecting a plant or any plant material based on detecting the fragment. Rather, Rambaud *et al.* state that "[w]e were unable to determine whether the appearance of sterility in chicory is due to a transfer of the sunflower gene responsible for this characteristic." (*See* Rambaud *et al.*, "Male-sterile chicory cybrids obtained by intergeneric protoplast fusion," Theor. Appl. Genet. (1993) 87:347-350, left hand column of page 350.) Further, in a subsequent publication in which Rambaud *et al.* describe the CT41/1 plants, (Rambaud *et al.*, "Chicory-sunflower protoplast fusion," Comptes Rendus De L'Academie D'Agriculture De France, vol. 80, no. 7, 1994, (cited in the International Search Report for the corresponding PCT application PCT/FR97/00944)), Rambaud *et al.* state:

Ces résultats ne sont que préliminaires et ne nous permettent pas de déterminer si l'orf522 est bien responsable de la smc chez la chicorée ou s'il existe, ailleurs dans le génome, un autre gène qui aurait été créé par réarrangement du génome mitochondrial et qui serait spécifique de la chicorée;

which may be translated to state:

These results are only preliminary and do not allow us to determine whether orf 522 is actually responsible for the CMS in chicory or if it exists, elsewhere in the genome, another gene which would have been created by mitochondrial genome rearrangement and which would be specific for chicory.

(*See id.* at page 67, paragraph 2.) As such, Rambaud *et al.* (1993), (or Rambaud *et al.* (1994)), is not an enabling reference as indicated by the authors themselves. Because Rambaud *et al.* does not disclose or suggest detecting a 347 bp fragment that corresponds with cytoplasmic male sterility nor selecting a plant or any plant material based on detecting the fragment, and because Rambaud *et al.* is not an enabling reference as indicated by the authors themselves, Applicants respectfully contend that new claims 19-36 are patentable over Rambaud *et al.* and request that the Examiner reconsider the rejection under 35 U.S.C. § 102(b).

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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